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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,098	02/23/2001	Viruthiamparambath Rajakumar	3164.141USWO	6938

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EXAMINER

NGUYEN, NGOC YEN M

ART UNIT	PAPER NUMBER
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1754

7

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/720,098

Applicant(s)

RAJAKUMAR ET AL.

Examiner

Ngoc-Yen M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-11 are rejected under 35 U.S.C. 112, first paragraph and second paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed inventions; and/or as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 7, 9 since the elements in the claim, e.g. "means for controlling oxygen into the fluidized bed reactor and means for controlling oxygen to chlorinator waste molar feed ratio, superficial velocity of fluidising gas, proportion of oxygen in the fluidizing gas" (claim 7) and "means for maintaining temperature in the cyclone..." (claim 9), are written in a "means-plus-function" format, it must be interpreted as corresponding structure described in the specification or the equivalents thereof consistent with 35 U.S. C. 112, sixth paragraph. In re Donalson, 16 F.3d 1189, 1193, 29 SUPQ 1845, 1848 (Fed. Cir. 1994) (en banc). However, since the instant specification does not disclose adequate structures corresponding to each of the claimed elements and the

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equivalents for performing the recited functions, it is impossible to determine the structure of the claimed elements and the equivalents thereof, as required by 35 U.S.C. 112, sixth paragraph. See Ex parte Klumb, 159 USPQ 694 (Bd. App. 1967).

In claim 11, it is unclear how a process limitation can further limit an apparatus claim.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann et al (4,060,584) in view of Hsu (4,994,255) and Miyata et al (5,707,919).

Hartmann '584 discloses a process for recovering gaseous chlorine and solid ferric oxide from chlorinator dust (note claim 1). In step (a) of the process, the oxidation step occurs essentially according to equation I:



Since the reaction is carried out at relatively low temperatures, i.e. 500 to 800°C, combustible secondary constituents of the chlorination dust, such as carbon, are definitely not oxidized (note column 3, lines 20-30).

In the process of Hartman '584, because the carbon content is not oxidized, the process condition of Hartman '584 would inherently be the same as that of the claimed

invention. In any event, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to optimize the process condition of Hartman '584 in order to achieve the desired result, i.e. no oxidation of the carbon content.

The difference is Hartmann '584 does not disclose that the process is carried out in a fluidized bed.

Hsu '255 discloses a similar process of recovering elemental chlorine from ferrous chloride using a fluidized bed (note claim 1). Hsu '255 further discloses that the reaction between ferrous chloride and oxygen is an exothermic reaction (note column 6, lines 18-22).

Miyata '919 teaches that in a reaction, which generates a large amount of heat (i.e., exothermic), fluidized bed is preferably used because it can easily remove the heat (note column 6, lines 15-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use carry the process of Hartmann '584 using a fluidized bed because Hsu '255 teaches that such use is common for an analogous process and because Hartmann '584 prefers keeping the reaction low and as suggested by Miyata '919, the use of fluidized bed would help remove the heat generated by the exothermic reaction.

Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bagley et al (4,329,526).

Bagley '526 discloses an apparatus, which comprises a fluidized bed reactor, a steel jacket for heating and/or cooling the fluid bed (this is considered the same as the claimed "means for controlling temperature within the fluidized bed reactor", a cyclone, and a nickel ring utilized to feed oxygen to the reactant zone (note Example 1). For the preamble "for recovering chlorine from chlorinator waste", indications of the contemplated field of use in the preamble are not limitations to be considered in the question of patentability, *In re Hack* 114 USPQ 162.

For claim 11, the temperature limitation is to the process, not to the apparatus, therefore, it is given little weight.

The difference is Bagley '526 does not disclose the means for controlling oxygen to chlorinator waste molar feed ratio, superficial velocity of fluidizing gas, proportion of oxygen in the fluidizing gas. However, since it is unclear what are the structures of the claimed elements, no rejection can be formed for these elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (703) 308-2536. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (703) 308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
March 24, 2003